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EDITORIAL

LOOKING FOR THE FACTS

The current RB issue deals with two main questions: possible reproducibility (and, therefore, predictability) of the UFO phenomena and search for ET traces on the surface of the Moon. Being rather different, these questions have, nonetheless, something essential in common. First, if (some) genuine UFOs are ET spacecraft (and one can hardly reject this hypothesis a priori), alien activities on the Moon should in fact be expected. Some data seem to confirm this thesis (see, for example, RB, 1995, Vol. 2, No. 1, pp. 8–10).

Second, what is in some sense even more important: when examining these questions, we are building—from different directions—a real empirical basis for non-classical SETI. There are various empirical data worthy of attention in this respect—UFO reports, photographs of more or less enigmatic structures on other planets, etc, etc — but these data can so far be considered rather as "raw material", than as a systemized body of knowledge.

On the other hand, it is evident that "non-classical" SETI has accumulated a much larger amount of this "raw material" than its "classical" counterpart. Paradoxically enough, established science ignores the former, continuing its search for radio-messages from extraterrestrial civilizations. Although still lacking any piece of observational verification, the model of the radio-search for ETIs, proposed by G.Cocconi and P.Morrison almost 40 years ago, has remained basically the same (except for some local modifications). It seems to be unduly rigid and immune to empirical data (or their absence, which sometimes is even more significant). The radio-search for ETIs is certainly not blameworthy in itself; but the desire to consider it as the *only* allowable method of SETI certainly is.

For decades our terrestrial radio astronomers have been looking for extraterrestrial ones with the help of sophisticated equipment. Not finding them in a series of experiments, the researchers either continue to hope for a further series of experiments, or deny the very existence of ETIs. A simple idea that perhaps radio astronomers are not the only intelligent species in the Universe (nor even on the Earth) falls outside the accepted paradigm and therefore cannot be taken into account.

At the same time, a serious ufologist cannot but envy the lack of the real pseudoscience around the radio astronomical search for ETIs. (Not to mention the pseudo-ufological nonsense, so common for some newspaper pages. A year file of any tabloid — American or Russian, it is at present of no difference — can fully explain and to some extent excuse an active reluctance of professional scientists to become in any way associated with this heavily contaminated field.) Radio astronomy is far from everyday life; ufology is, let's say, up to the ears in it, and it can be "scientized" only with much effort.

An "intermediary" position in this list is occupied by the "cosmic enigmas" — real (e.g., the "Mars Face"), or doubtful — such as the "Moon spires" discussed on pages 6–9 in the paper by M.Granger (France) and R.Dehon (Belgium). This is, to my mind, an example of really good investigative journalism, with a detailed exposition of the story and sufficiently concrete conclusions. I think these conclusions will be of interest to our readers; the more so, that some authors still hold the "spires" to be a manifest ET artifact. Once again, not the hypothesis should be blamed, but rather the lack of strong evidence in its favor. Currently the tendency to see extraterrestrial structures everywhere on the Moon has become more than popular in the anomal-

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istic community, but these hypothetical constructions are scarcely persuasive.

Does all this mean that we should not look for possible ET traces on the Moon? Not at all; please see the letter by A.V.Arkhipov published on page 10 as an example of the reverse. A serious work in this direction is always welcome. Its results may far exceed our expectations.

Well, the "cosmic enigmas", although rather distant from the terrestrial observers, at least do not try to leave their native places, peacefully awaiting future space probes to photograph and study them in detail. UFOs are essentially different objects: elusiveness is, in some sense, their *modus vivendi*; they constantly run away from the observer. Under such conditions, even a hint concerning recurrent phenomena of this kind is of much value. In this respect, the report about the UFO landings on the Mzha river, which opens this RB issue, seems to be worthy of attention. Whether or not the events will in fact recur, still remains unknown; but if yes, we must be ready to that.

— **Vladimir V. Rubtsov**

A SECOND UFO LANDING ON THE RIVER MZHA: A PRELIMINARY REPORT

P.K.Kozub, P.I.Kutniuk, V.S.Mantulin, V.V.Rubtsov

1. The events

Some six years ago, on January 7, 1990, about 8:40 a.m., Mr. A.E.Vorontsov, a resident of the little town of Merefa (located about 30 kilometers SSW of Kharkov) saw over the frozen river Mzha a UFO. It was a big top-shaped object with the diameter of its base approximately 25 meters, and the height, including its spire, about 5–6 meters. The object was situated on the ice or slightly above it in a small bay. The spire and the base of the object were greyish-blue, and its body —orange- or rose-colored. The base was pulsating "as if some balls were rolling around there".

The witness observed the object in astonishment, as he believes, about 10 minutes. Then the UFO suddenly took off vertically, to an altitude of some 30 meters, hovered for several seconds and then flew eastward. A big round piece of ice on the landing site sank into the water, then it rose again back to the surface.

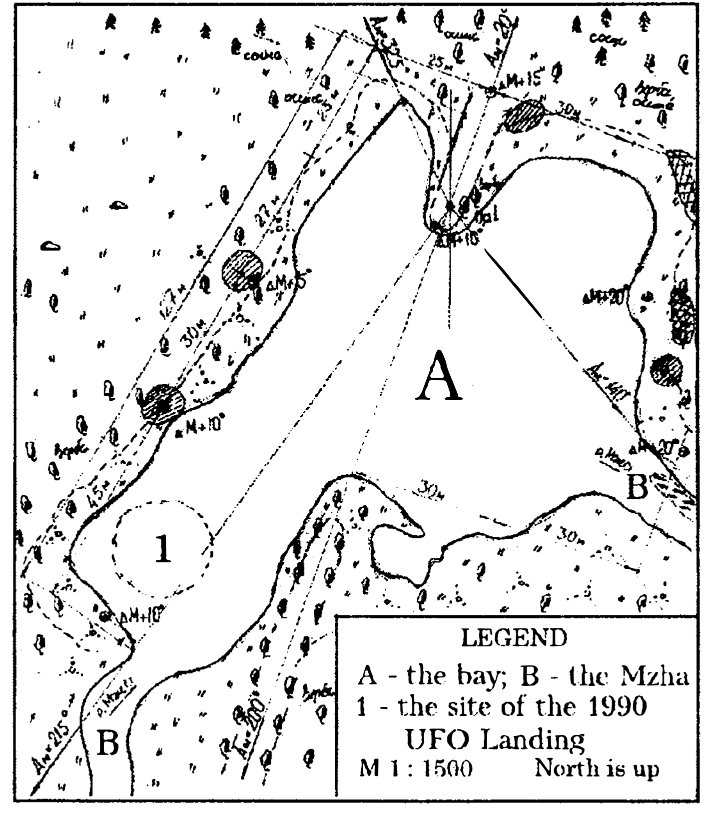


Fig. 1. Map of the location

A distinct ring (or rather a system of rings) with an inner diameter of 20.7 m and one meter wide, has remained on the ice. The rings were very regular and clearly outlined, as if made by a giant milling machine cutter. The trace remained visible for a few weeks after the date of the event, but when the ice melted it obviously vanished.

It is worthy to note that on January 7 the ice was still rather thin due to a comparatively warm winter, and it was not until January 13 that it became thick enough to safely bear the weight of a man walking on ice. Thus, the traces could hardly have been hoaxed. The depth of water under the circle is about eight meters.

The site was mapped (Fig. 1), photographed (Figs. 2–4), and samples of the ice were taken. They were analyzed in a chemical institute of the USSR Academy of Sciences (with the help of the academic Expert Group on Anomalous Atmospheric Phenomena). No peculiarities were, however, found, except that in one sample there proved to be a slightly increased concentration of platinum (2.5×10^{-7} grammes per liter, versus some 0.5×10^{-7} in other samples).

On December 1995, a second UFO landing has occurred practically at the same place. As was reported by Mr. P.Mandych, an inhabitant of the Kravtsovo village (located some 3 km from the site), on the night of December 4–5 he observed from a window of his house (when smoking, as he was accustomed to do) a "big round object" flying at a not-so-high altitude "towards the local poultry-farm". The object had bright lights along its perimeter, reminiscent of incandescent lamps. It moved swiftly and noiselessly at the distance of no more than 500 m from

P.Mandych's house (by the witness's estimation). The trajectory of the object, as P.Mandych quickly realized, was directed to the place of the 1990 UFO landing. (That event had been broadly publicized and almost every inhabitant of Kravtsovo had visited the site.)

So, on the morning of December 5, 1995, P.Mandych, with his wife and some other villagers, went to the small bay of the Mzha river. When they came there, they saw that there was no UFO, but a circle of ice some 26 m in diameter (by the witnesses' estimation) was cut from the surrounding ice. It slowly rotated under the action of the river current. The circle was situated almost where the 1990 rings had been. The ice inside the ring (the center included) was absolutely undamaged (just as in 1990). On either side of the circle's edge one could see a few narrow concentric rings scratched on the surface of ice.



Fig. 2. The 1990 circle.

The ice was very thin (less then one centimeter thick) and covered with a film of hoarfrost. At a distance of about 5 m from the bank, near the edge of the circle, there were seen on the hoarfrost "a few small footprints, like children's ones", that led nowhere. The witnesses believe, however, that the ice could not have supported even a dog.



Fig. 3. Part of the 1990 circle.

When the site was visited by a few RIAP specialists on December 9, 1995, the ice has already thickened up to some 10 cm and the circle had been frozen into the surrounding ice. The rings were, however, clearly visible, although less developed and narrower than the 1990 ones had been (Figs. 5–7). The inner diameter of the circle proved to be 22 meters (the witnesses' estimation of 26 m can be easily explained by the faulty eye), and the width of the rings 60 cm. The site was photographed and some samples were taken again. At this writing the latter have not been analyzed as yet.

We have made a hole in the ice (directly across the rings); the bottom ice surface proved to be quite smooth, without any peculiarities. The upper surface of the ice, both inside and outside the rings was also fairly smooth, except for some small ice-hummocks near the rings. In some places outside the circle there were several arcs scratched on the ice — or maybe parts of an outer (incomplete) ring. There is an impression that the object hovered low over the ice surface, sometimes leaning and touching ice here and there.

The exact location of the supposed landing trace was not determined during the first expedition to the site. By eye, however, the 1995 circle is situated almost at the same place as the preceding one, maybe somewhat nearer to the bank.

The locality has no enterprises around (except for the poultry-farm) and remains one of few ecologically safe places in the Kharkov Region. When visiting the site in summer we were much impressed by the Mzha's clear water and wonderful vegetation. A common joke then became: "Probably some extraterrestrial smugglers transport from here the most precious substance in the Galaxy — pure water!"

2. Preliminary conclusions

The first (1990) UFO landing on the Mzha was interesting indeed even in itself. It was discussed in detail at a summer 1990 meeting of the Expert Group on Anomalous Atmospheric Phenomena of the then USSR Academy of Sciences. The common opinion arose that it could not be explained by ordinary causes, and therefore the "Mzha UFO" was a UFO in the strict sense of the word. (This term does not designate, of course, an alien probe; it means just what it means: an *unidentified* flying object.)



Fig. 5. Part of the 1995 circle.

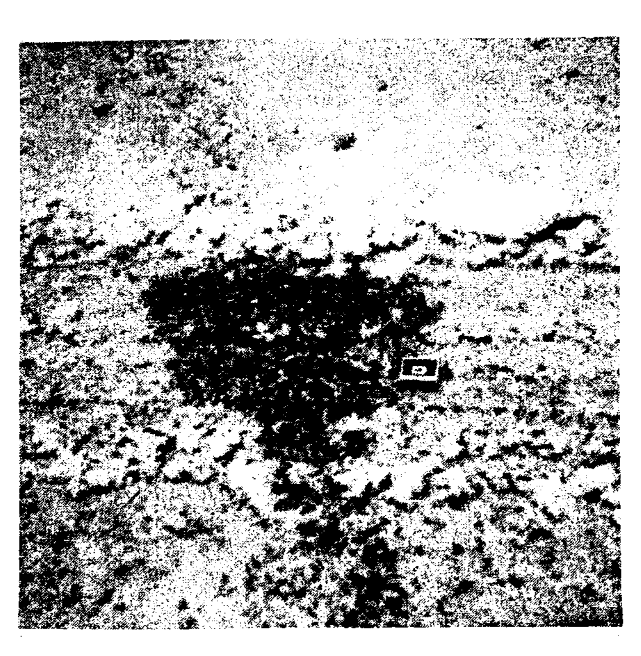


Fig. 6. Detail of the 1995 circle.

The fact that a second UFO landing has occurred at the same place six years after the initial one has made the event(s) even more interesting. Recurrent (if not reproducible) events are of much potential importance to ufology. In fact, only such events may constitute its solid empirical basis. The time interval of almost six years is not highly encouraging, but it is better than nothing.

(There is in fact no proof there had been no other landings during the five winters between January 1990 and December 1995: the site is not frequently visited in the winter, to say the least. If the 1995 UFO had turned off its lights when flying, nobody would probably have decided to go there to look for its traces. A night landing in the little bay of the Mzha river in the summer would not have been necessarily observed either. But this is just a supposition, of course.)

It is certainly somewhat risky to draw significant conclusions from such a limited material — only two events separated in time by almost six years. Via two points one can draw only one straight line, but an infinite number of curves. Nobody can guarantee we must connect the 1990 and 1995 events with a "straight line", and not with a "curve". On the other hand, one point (a usual situation in ufology) is in this sense even less restrictive. Therefore, attempts to infer something essential from the Mzha phe-



Fig. 4. Detail of the 1990 circle.

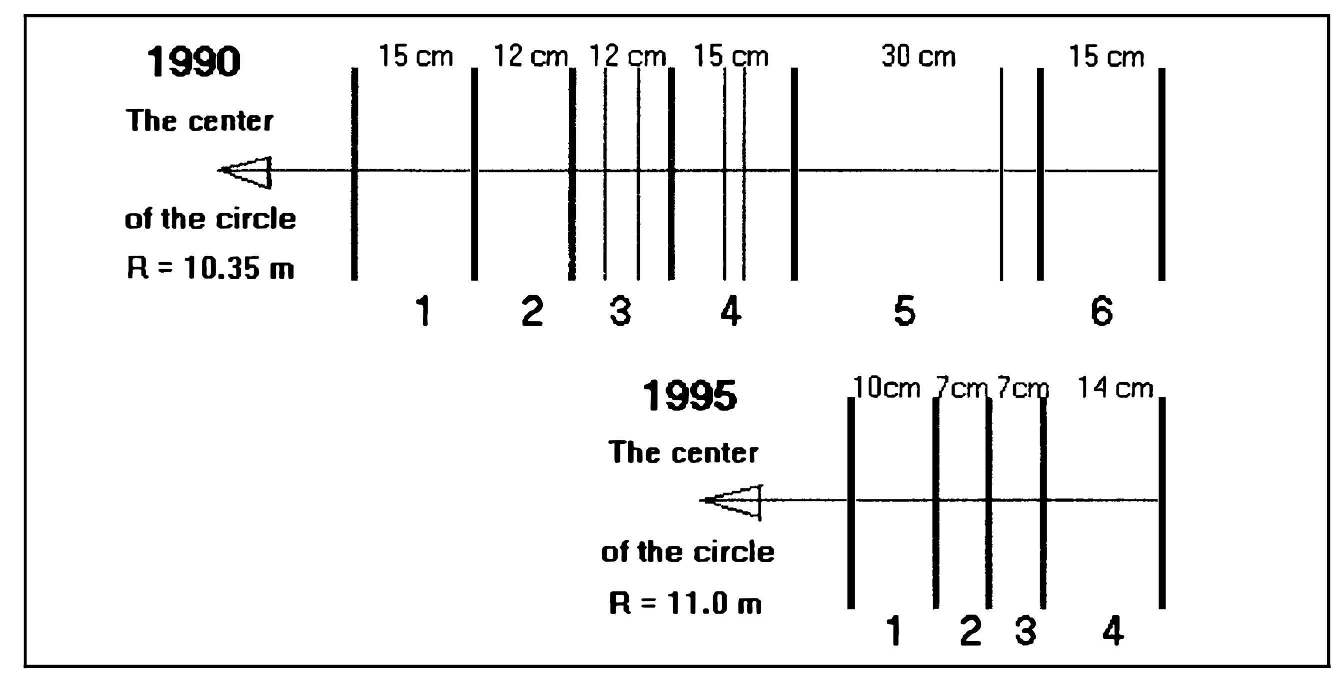


Fig. 7. Structure of the rings.

nomena are not so much blameworthy.

What data have we got to base on them our inferences? First, these are *facts of reality* — the traces on the ice. The 1990 and 1995 traces are closely similar, but not identical. The second ring was somewhat larger (the inner diameter 22 m versus 20.7 m) and narrower (0.6 m versus 1.0 m). Both the circles have appeared at the same place (with an accuracy of a few meters) on a very thin ice that had just covered water of the Mzha (although in 1990 it happened in the beginning of January, and in 1995 in the beginning of December).

Second, we have got *reports of the eye-witnesses* who observed UFOs. In 1990 an object hovered over the landing (or near-landing) site; in 1995, another one was seen flying in the direction of the site. Although in the latter case there was no direct observation of a UFO at the site (at least, we do not know of any), the parallel is obvious.

There are two main possible interpretations of these facts and reports:

1) The UFO observations both in 1990 and 1995 have been just made up by the "eye-witnesses" (or greatly exaggerated). The rings have resulted from some peculiarity of the river current (or the place as a whole) that we cannot recognize as yet. This version seems to be rather flimsy: when questioning the witnesses, we did not find any reason to doubt their sincerity. It has, however, at least one merit: it can be tested in the course of regular observations of the site. If not proved, this supposition will have to be rejected, but at present it must remain in view.

2) The reports of the witnesses are accurate enough and the circles were due to genuine unidentified flying objects that came there from somewhere. To test this hypothesis will not be that easy, even if it appears more sound than the first one. Strictly speaking, there is only one way to prove it: a third UFO landing at the site has to be recorded instrumentally.

3. Future trends

What can and must be made to solve the problem? First of all, it is important to investigate the chemical and isotopic contents of the samples collected. It is also essential to look for any possible parallels to these cases (in respect of the traces' form, dimensions, and structure) in computer UFO and crop circles data bases. Unfortunately, the process of computerization of post-Soviet ufology has not been as yet completed (to say the least), and therefore we would be deeply grateful to any RB reader who could supply us with any information of this kind.

As regards further investigations at the site, they should be focused, in our opinion, on the possibility of a third UFO landing there (or at least a third formation of the circle). Of course, such a possibility may never materialize. But to miss this — even if remote — opportunity of a prearranged observation of a UFO landing would be inexcusable.

Ideally it would be necessary to constantly monitor the site with a set of automatic recording apparatus (video cameras, photo cameras, infra-red cameras, etc.) during the next, let's say, 10 years. Under the current circumstances this is certainly unrealistic. Seasonal presence of a few observers equipped with video- and photo cameras (especially while the river is freezing up) would be, probably, a reasonable compromise between what is needed and what is possible. Readers of the *RIAP Bulletin* will be kept informed about further development of this research work.

SHADOWS ON THE MOON

M.Granger, R.Dehon

As was once noted by Dr. Richard S.Young, NASA Chief of Exobiology, no reputable scientist publishes his report in the newspaper; he publishes it in a scientific journal, then the data are released to the news media. This almost deontological and scientific rule was totally transgressed in this "moon spires" affair... the myth still lives on today. A recent book — *Extra-Terrestrial Archaeology* by D.H.Childress — is a good example of that. We propose to make the point and start with the historical context, not forgetting this enigma is very human too. That is why we will present this article in a narrative mode, because there is a real story to be told.

The Moon ship

The *Lunar Orbiter 2* (LO2) mission was to transmit to the Earth photographs of potential landing sites for future *Apollo* flights. The LO2 probe was fitted with a double stage camera, that gave, under an 80 mm lens, a wide angular photo, and other close pictures thanks to a 610 mm telelens. The first type of view is abbreviated to MR for medium resolution; the second one is of the HR type, for high (one-meter) resolution. Landing sites could be prime, secondary, or tertiary. 'P–4' means 'prime site number 4', the fourth in a series to be pictured.

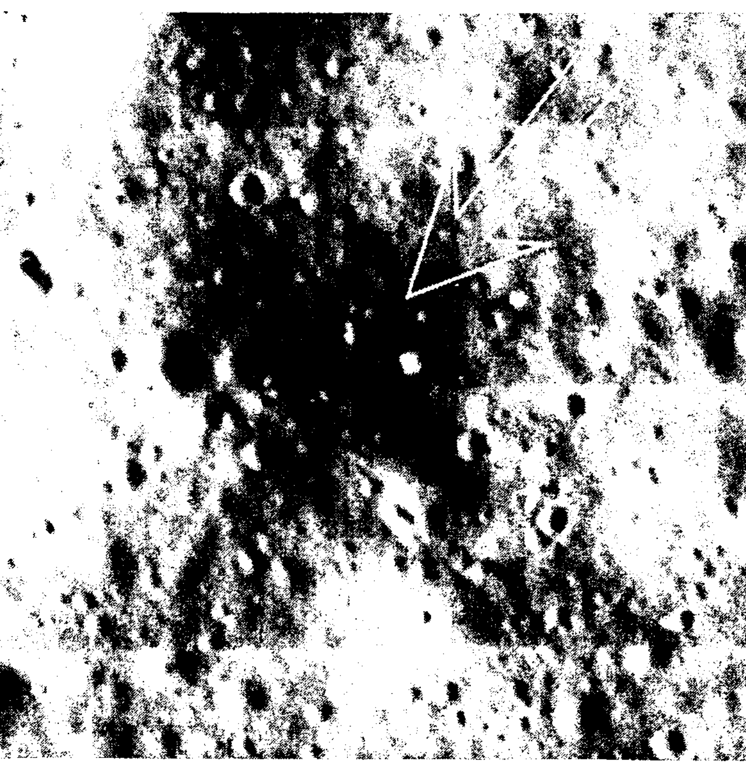


Fig. 1. The moon spires.

The picture

On November 19, 1966, at 22 hours, 41 minutes GMT, *Lunar Orbiter 2* was photographing the moon. Prime Site 4 was the target: a band of terrain just west of the Sea of Tranquillity, not far from where Man will land. LO2 took a series of six MR pictures and as many HR ones. One picture will hold our attention: LO2 #2061 in the MR code. Each MR picture has its own HR one, automatically recorded by the two-stage camera. A single HR picture is an elongated rectangle centered in the MR one. As we decided to have the best possible resolution, we contacted World Data Center A, at Goddard Space Flight Center in Maryland, to order 10 x 12.7 cm negatives of the whole P–4 imagery. In this case, each HR photograph is divided into three parts, from bottom to top (in NASA codes: LO2 HR #2061/1/2/3, the 1 being the southernmost one and the 3 the northernmost). The site of the spires is situated ca 15°33'E and 5°03'N, north of the crater Ariadaeus and south of two little craters named X and Y. The site is easily spotted on our positive print. (See Fig. 1 that represents a portion of it. Fig. 2 illustrates schematically the spires' location.)

What we can see on the blow-up is rather simple: you have what seems to be a very big object throwing a huge shadow near the center of the picture (North is up). Then, if you scrutinize the photo better, you see some other similar structures casting smaller shadows nearby. The terrain is fairly flat, the tallest structure being at the rim of a shallow depression, surely not on a steep crater slope. This depression gives the idea the outer sides of it look like a rectangular formation. Two rectangles are overlapping each other, where the inner walls seem to have collapsed. This is just an idea because we are still under a first impression or interpretation; please remember the LO2 HR resolution: a mere one meter!

The in-crowd

A few hours after the reception of those pictures at the Jet Propulsion Laboratory (JPL), Mr. Papa —a radio code-name for some privacy — a friend of an engineer working for JPL, who will be called Juliet for the same reason, told his local NICAP branch that strange lunar spires photos were pinned on the JPL analysts' office walls. The LO2 departments seemed to be in some kind of turmoil: something never seen on the moon! Gossips even pretended protuberances were spotted on the top of certain spires! The day after, Papa reported Juliet's sayings, the pictures had been removed: they were classified, the US Air Force secured them! A little bit too late because Papa had the time to make a sketch of the lunar spires from a picture supplied by Juliet. Strangely the drawing shows two big shadows when there is in fact only one. Papa was on a hurry: when you

make a close examination of the sketch, you see Papa doubled the most remarkable features. One of many misadventures that led Mr. O'Toole, staff writer from *Washington Post* and the late Dr. J. E. McDonald, Arizona University, well known to ufologists, to conduct never ending research. Anyway the newspapers and magazines of the end of 1966 were plenty of disturbing headlines.

Those sentinels

Two hypotheses could be of interest: 1) the lunar spires are topographic accidents, not known at the time the news was spread; 2) they are artifacts left by an ET civilization, this is the Space Odyssey model. As a matter of fact, NASA never expressed this last view. But their telex press release, wired about 48 hours after prime site 4 was pictured, gave fuel to the fire, to say the least. This is the text:

"NASA, Hampton, Va. — November 22, 1966 — Orbiter II–6 — Lunar surface with large protuberance in cratered upland basin approximately at 15°30'E and 4°30'N. The photograph is enlarged about 5 times from the original film on which Orbiter photography is recorded on Earth. The white crosses in the photograph are reference marks used by scientists in photographic measurements. The reference mark lines represent about 25 feet on the lunar surface. The area shown is about 750 by 550 feet. Since the photograph was taken shortly after local sunrise, the shadows point westwards. The striking shadow casting protuberance, located in the center of the photograph is about 50 feet wide at base and about 40 to 75 feet high, based on the length of its shadow cast by the sun 11° above the horizon. Precise height measurements will be possible after ground slope measurements have been made. The photograph is part of prime site 4 (II P–4) and was received November 21 by the Goldstone Tracking Station. Lunar Orbiter is managed for the National Aeronautics and Space Administration by the Langley Research Center, Hampton, Va. The Boeing Co., Seattle, Wash. is the prime contractor."

The press jumped at the supposed sensation. But no news is long-lived in this world... End of December of the same year, 385,000 GIs were fighting in Vietnam. Papa and his friend fell into the oubliette.

The ghostbusters

While others carry on: Ms. Judith Anne Hatcher, for example. A NICAP corespondent, she introduces herself as "a freshman astronomy major at UCLA". Something that was not confirmed to us by this University, by the way. December 27, 1966, just one month after NASA received the moon spires pictures, she sent to NICAP a pretty good report later published in *Fate Magazine*. Judy used for her work the same NASA photo, an HR area blow-up, and it is most certain she did not possess any other kind of information.

One piece of information is crucial: the sun's elevation, which was of 11°, a figure known to Judy (LO2 Supporting Data gives 10°56'). The

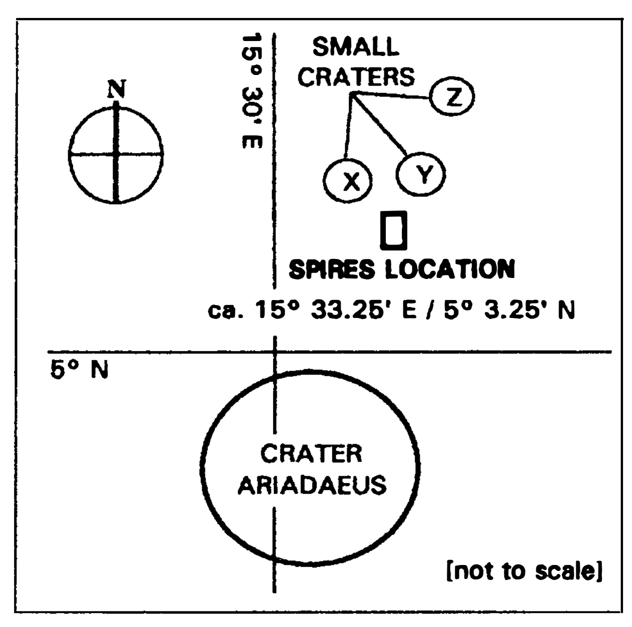


Fig. 2. Location of the "spires".

other capital data is the terrain slope: we must admit its value was a bit nebulous... Only a panoramic view could help us, an element unknown to Judy: now we have it under our eyes. Of course, it is still impossible to determine the slope to the minute, but we can assume the spires are not on a crater slope, as said before: the relief shows a depression, the main spire's shadow overlooking it. The two rectangular pit-like formations are less obvious: the more the picture is blown-up, the less the structures are apparent. Perhaps there is a photographic trick that we cannot explain for the moment.

The solution... or not?

In the June 1966 issue of NICAP *UFO Investigator* magazine, answering a reader's inquiry, Richard Hall replied: "Scientists now believe that the lunar features casting the strange shadows are not as tall as originally assumed and therefore cannot properly be described as towers". That's all folks!

The case could have been stopped here. What was exactly meant by *Sky and Telescope* magazine, which in their January 1967 issue wrote: "A misunderstanding that may crop up in uncritical books and articles for some years to come..." This allegation is not that far from the truth, indeed.

Nonetheless, Judy Hatcher confirms her December ideas, still awaiting news from O'Toole and McDonald who sends, on April 4, a letter to Richard Hall precising: "...the Lunar and Planetary Laboratory staff quickly located the 'spires' on their own photo-sets from information I passed on to them. They recalculated the local sun-angle for the assumed horizontal lunar surface and confirmed the NASA value of 11°. But the spires are not casting shadows on a horizontal surface, they find. Instead, those objects lay on the inner slope of a general crater area, and Whitaker estimates the slope at even more the value of 2–3° suggested by Leon J. Kosofsky, who wrote me from NASA. Whitaker says 'I would assume an angle of at least 5–6°'".

'General crater area' is perhaps a good wording: it's not exactly a crater slope, but the terrain is not really horizontal. Once again, all these remarks are based on the only 67–H–758 picture (under this code it was spread to the press). NASA seems not interested in providing other pictures or making any comments. Nothing will be divulged. We have met with the same mutism twenty-five years after.

And then came Blair

William Jury reactivates the enigma on the cover of the trade magazine *Boeing News* (Vol. 26, No. 13, March 1967). Read that title: "Regular geometric patterns formed by Moon 'spires'." There we go again and, yes indeed, William Blair's hypothesis will make some noise, simply because he gives value added quality to the rumors. Blair worked for Boeing as anthropologist in the company's biotechnology unit. He had some experience in researching man settlements through the means of aerial photography. "Except for primitive, nomadic peoples, — he explained in the Boeing magazine, — man tends to construct single and multiple structures in geometric forms". Ley-hunting amateurs will applause this. Blair then proposed what he called "a limited and highly speculative analysis of suspect coordinate relationship..." If the spires were natural formations, it would mean their distribution would be at random and their geometric relations would develop an irregular system of triangles. Once again Blair's unique observation is based on the 67–H–758 photo where he finds the following characteristics: three right-angled triangles, six isosceles triangles and two axes comprising three spire positions. The curtain is up: in Europe the moon spires will be named after him: "the Blair's spires"! However in the same Boeing paper, Dr. Richard Shorthill from the company's Scientific Research Laboratory rises another viewpoint: "These rocks, if that's what they are, are resting on a local surface which was tilting away from the sun when the photograph was taken. That accounts for the long shadows." To take it short, the reader can find anything he wants. Can these structures be extraterrestrial artifacts? Hear how William Blair closes the meeting: "Whoa! Do you want them [Boeing, Ed.] to put me away?"

The follow-up

May 1, 1967, Judy informs NICAP she got some NASA photos at last, 45 x 24 cm blow-ups from different sites, P–3b (frame 57), S–5 (frame 75), etc. All the pictures are medium resolution. Impossible to notice anything, we experienced the same kind of disappointments. *Space World* magazine dated June 1967 is, to our mind, the first really to enhance the story for a non-general public readership. William Jury, from Boeing, how strange, is the man who explains—and repeats—what is already known. In December 1967, *Fate Magazine*, and not NICAP which had a good dossier close at hand, publishes Judy's thesis. All is centered, as usual, round the 67–H–758 picture. *Flying Saucer Review* follows suit with its September/October 1968 issue. Dan Lloyd's report is a clear honest piece. The bomb detonates with the Russian *Tekhnika–Molodyozhi* magazine (1969, No. 5), which made its cover with a fine four-color artwork representing — mirror-like, sorry comrades — the spires. Four lunar anomalies are studied in the central article signed by Soviet space engineer Alexander Abramov. The spires are now 46 meters high! Abramov re-enforces Blair's thesis adding some connections with the Great Pyramids of Egypt layout: abaka and all the rest. *Argosy*, in August 1970, with Ivan T. Sanderson's paper, is maybe the last item to close our list. Never again will the moon spires make the headlines of any magazine.

Let's think a bit

Now is the time to propose our interpretation of the spires. First we put together two blow-ups coming from our HR 10 x 12.7 cm negatives, that made a combined 580 x 800 mm glossy print. The second move was to seek advice because we wanted to avoid the past errors inherent in all the amateurs' works we read about. Mr. Keith Abineri, from the United Kingdom, decided to help us. He was able to check and re-check all our hypotheses on his NASA microfiches and microfilms.

The reader must know we not only fully agree with his assertions but support them, after scrutinizing the blow-ups and hundreds pages of documentation. Yes, JPL was, indeed, fast on discovering the spires and NASA kicked the afterburner to deliver the news to the press: at that very moment, the situation went out of control. "Perhaps the most interesting part of the story is, after all, concerned with human behavior, perhaps the most unpredictable form of all behaviors, — said Keith Abineri. — The reactions of many human beings to historical events, which they do not understand, are bound to have surprising results. It is the task of an able historian to put this all in context, though interpretations are bound to differ".

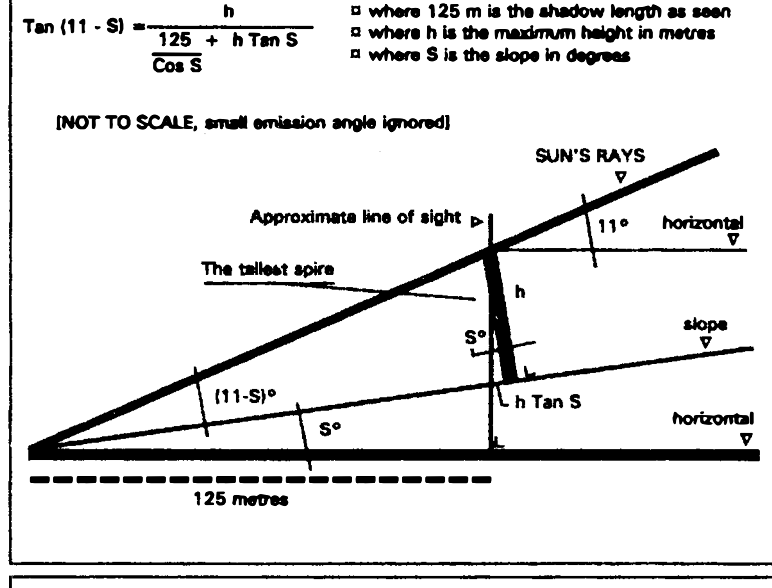
Were the spires ET artifacts planted there for unknown good reasons, we get back to the Space Odyssey theory... Would the reader ever believe one nanosecond an ET civilization will play with stone blocks to signal its passage in our galactic backyard? "Of course I am certain, — Keith Abineri goes on, — that these objects are boulders and represent nothing artificial. I am sure that they are the products of explosive impact and travelled at high speed over the lunar surface, in some cases ploughing groove valleys in the regolith".

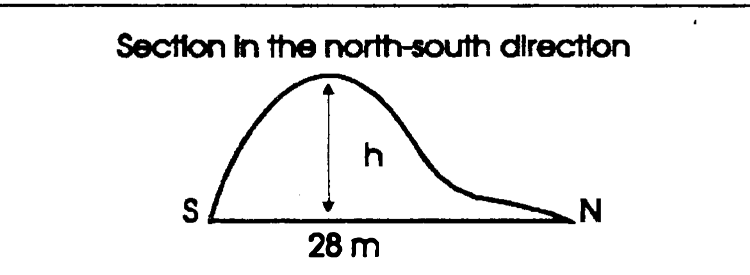
Blair's thesis was in fact not as convincing as it could seem. If the reader goes in his garden and has a sharp look at a tiny part of it (garden... or CIA Langley's forest of antennas, Disneyland ice-cream distributors or the Soignies Wood copper beeches not far from Brussels, his choice will be the best), he will discover a lot of would-be strange alignments, with axes and all the kind of triangles he can name. Does that mean there is a real ET intelligence behind them? Not at all. Because he is working on a limited part of a random layout: Blair was elaborating on a small extraction of a wider area. When we look

at our blow-up covering some three square kilometers, we discover at least 17 other spires, some of them really on crater slopes, and very tall. If we count the alignments of two, three or more artificial points, we arrive at about 20 straight-on axes! The very artificial essence of that hypothesis disappears into the lunar non-existing thin air.

Conclusions

It is better to concentrate on what the Moon spires really are. Keith Abineri reports: "I am convinced that the principal object is a boulder lying on the inner slope of a crater and cannot be a 'spire' or 'pinnacle'. The beautiful photograph of the boulder and its surroundings in Kopal's atlas has been examined carefully as the HR blow-ups you sent me. The small white cross has been used to scale the features, since it has the approximate real size of 8 x 8 meters. This gives the shadow length of the main boulder as 125 meters. If this is projected on to a slope, a correction must be made. The north to south width of the boulder is about 28 meters. From the shadow it is clear that this object has variable height, the northern end being much lower than the center. The overall shape of the boulder is quite irregular. I have estimated in the table below (see Fig. 3) a range of maximum heights possible for the boulder based on a) a horizontal terrain, b) a 2° to 3° slope away from the Sun, as suggested by Kosofsky, c) a 5° to 6° as assumed by Whitaker. In order to make these estimates I have assumed that the Sun's elevation above horizon was 11°: please see diagram.





Assumed Slope S		Tan (11-S)	Tan S	Cos S	Estimated max height h
Horizontal	0°	0.194	0	1.000	24.25 metres
Kosofsky	2°	0.158	0.035	0.999	20.00 metres
	3°	0.141	0.052	0.999	17.80 metres
Whitaker	5°	0.105	0.087	0.996	13.30 metres
	6°	0.087	0.105	0.995	11.00 metres

Fig. 3. The results of K.Abineri's calculations.

Using the two limits of each of Kosofsky's and Whitaker's estimated slopes and the horizontal scenario, we have a range of possible values of the maximum heights of the boulder from 11 to 24 meters. Clearly the dimensions of the boulder are irregular but the north-south width is about 28 m. The vertical section in the north-south direction might resemble the drawing presented in the diagram frame. Therefore none of the height values would give a feature resembling a 'spire', which would have to have a height much greater than its base width. Since I know that Whitaker was extremely experienced in examining lunar imagery, it seems to me that the lower values of the maximum height in the table are the most probable. Of course the calculations are estimates, because the large boulder is obviously irregular in shape and we cannot see its full E to W width, because the western side would be hidden by its own shadow".

There remains one riddle which can be expressed in a few words: why such a fuss on the moon spires? Keith Abineri has perhaps proposed the most reasonable answer to this question*: "With the spires problem we seem to be bedeviled with faulty information! Perhaps this will be explained in terms of human errors, computer errors, inaccurate observations and descriptions of what was seen (or believed to have been seen), printing errors and bad proof reading, rumors rampant, confusion promoted by nervous security, who had succeeded in frightening themselves by what the Soviets might be planning, at the height of the Cold War, over-excitement and wishful thinking on the part of the UFO community, and, above all, a profound ignorance of what was being observed, explored and accomplished by a mere handful of skilled engineers and scientists. The human race was about to step into space, but where this would lead us, nobody could predict." Indeed, the moon spires affair will be remembered, for some years on, as a textbook-case. Beware, we must place a Sentinel!

*Authors' personal correspondence, April 1993 & January 1994; we agree with Mr. Abineri when he says these results tend to confirm Mr.Kopal's assumptions made in 1974 (see Z.Kopal, *The Moon in the Post-Apollo Era*, Vol. 7. Boston: Reidel, 1974)

LETTER

RUINS ON THE MOON?

Sir — Theoretically the Moon appears to be an effective attractor [1] and accumulator [2] of extraterrestrial artifacts. Hence, it could reveal if extraterrestrial intelligence existed in the Galaxy during the last 4×10^9 yr. A list of candidates which can indicate possible alien activity on the Moon has been published before [3].

An unusual formation near the crater Lovelace (100° W; 82° N) which was photographed by the HIRES camera of the space probe *Clementine* on March 9, 1994 (image LHD30055, that is shown in Fig. 1) could be added to the list. This formation looks like an isolated quasi-rectangular cluster of rectangular depressions occupying an area of some 13 km^2. Computer filtration of the image revealed an internal structure of the formation. It is found that a lattice of orthogonal linears, parallel to external sides of the cluster, divides it into 10 rectangular sections. Only one section is flat and slightly elevated above the surrounding lunar surface, others are depressions of a few tens of meters below the level of the environs. A funnel-like crater without any wall is well visible on one of the sections. It is generally believed that such craters are due to regolith's pouring into subsurface voids. Obviously the whole formation has originated as a result of the collapse of some subsurface caves. The remains of crashed vaults appear as two terraces on the depression slopes. It means that there are three storeys of the caves. The plotted contours of the surface slopes are shown in Fig. 2. Each solid line marks the upper edge of the slope (the fringe is directed downwards), and the dotted line is its lowest edge. This sketch map permits to partially reconstruct the cave system as is shown in Fig.3.

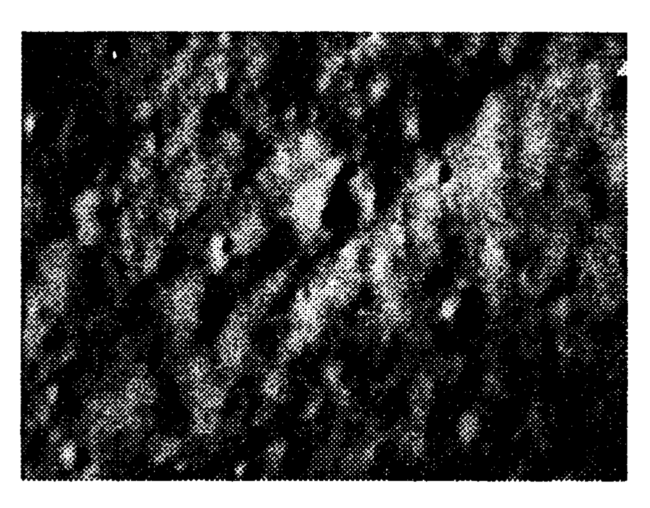


Fig. 1.

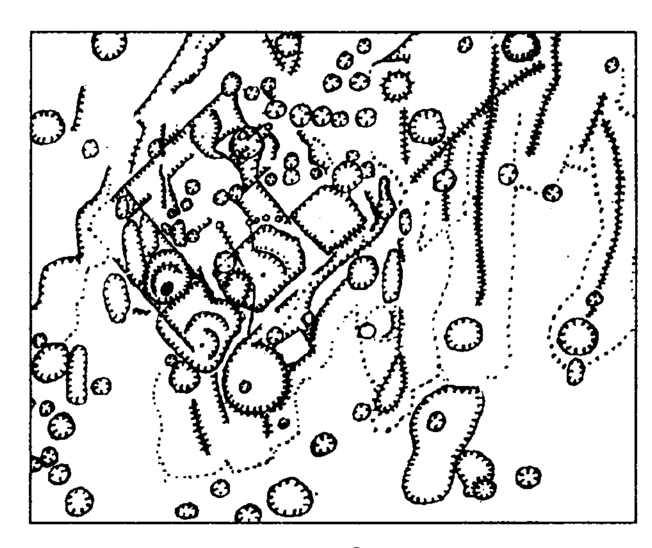


Fig. 2.

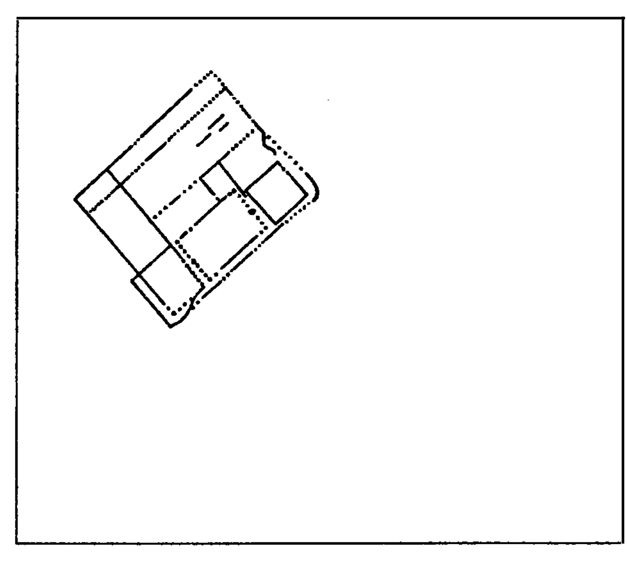


Fig. 3.

The rectangularity and regularity of these multistorey caves seem very unusual for the Moon. It is difficult to interpret these anomalies in terms of lunar vulcanism. However, rectangular patterns are typical for cultural features on the Earth [4], and modern projects for the lunar base consider subsurface constructions protected from meteoroids and radiation.

That is why the rectangular formation near Lovelace seems to be a promising candidate for archaeological reconnaissance.

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Alexey V. Arkhipov

EDITOR: Vladimir V. Rubtsov
RIAP
P.O.Box 4684
310022 Kharkov-22
UKRAINE